

# Graciloplasty for recurrent recto-neovaginal fistula in a male-to-female transsexual

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**Abstract** Rectovaginal fistula is usually a challenging condition for surgeons, but a fistula between the rectum and the neovagina in male-to-female transsexual is even more difficult to treat as it is a rare complication occurring in a patient with modified anatomy of the perineum, with heavy psychological implications for the patient. Here, we report a case of recurrent recto-neovaginal fistula in a male-to-female transsexual successfully treated by perineal graciloplasty.

**Keywords** Recto-neovaginal fistula · Perineal graciloplasty

## Introduction

Surgery for sex-reassignment is a growing field of interest in modern surgery. There is an increasing number of requests for treatment from patients who are affected by gender identity disorder and therefore have a sexual identity that does not match their genetic and sexual phenotype [1]. This type of surgery, however, is associated with a relatively high percentage of surgical complications including recto-neovaginal fistula.

Rectovaginal fistula is an infrequent condition but always challenging for colorectal surgeons. A fistula between the

rectum and the neo-vagina in a male-to-female transsexual is even more difficult to treat as it is a very rare complication occurring in a patient with modified anatomy of the perineum, with heavy psychological implications for the patient. Here, we report a case of recurrent recto-neovaginal fistula in a male-to-female transsexual treated by perineal graciloplasty.

## Case report

A 31-year-old patient, with a body mass index (BMI) of 24.8 kg/m<sup>2</sup> and without co-morbidities, underwent a male-to-female gender reassignment with the penile-scrotal skin inversion flap technique [2]. The patient's hospital stay was uneventful, and she was discharged after 5 days. However, a few days later, the patient complained of fecal leakage through the neovagina. A first, direct transanal repair was attempted 2 weeks after the first operation by transanal application of two resorbable stitches on the mucosa, but this treatment failed. After 1 month, the same operators made a second attempt to directly repair the fistula transanally but this time a diverting ileostomy was created to prevent fecal contamination. Despite this second attempt, the fistula recurred and the patient was referred to our Unit where she was scheduled for gracilis muscle interposition surgery.

The procedure was carried out in the lithotomy position, under general anesthesia and with antibiotic prophylaxis. The lumen of both the vagina and the rectum was cleaned with an antiseptic solution (povidone-iodine) and a Foley catheter was inserted into the bladder.

An anterior perianal incision below the neovagina was made until the fistula opening was identified. Great attention was given to good debridement of the fistula, with preservation of the vascular supply to the posterior flap (the

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scrotum) of the neo-vagina. The dissection was carried out until the rectal lesion was reached and continued for a further 2 cm on the normal anterior wall of the rectum. The leak was sutured with 3 interrupted Vicryl 3/0 tensionless sutures. Hydrogen peroxide solution was injected into the rectum through the anus to test the tightness of the suture.

The right gracilis muscle was then identified through 3 short skin incisions on the medial part of the thigh. The distal tendon insertion to the tibia was severed and the muscle was mobilized taking care to preserve its proximal neurovascular pedicle. A subcutaneous tunnel was then prepared between the proximal thigh incision and the perineal wound, and the gracilis muscle was transposed between the rectum and the neovagina to cover the sutured rectal leak. Its distal tendon was arranged clockwise around the rectum and sutured to the left ischial tuberosity after adduction of the right leg (Fig. 1). The perineal incision and the thigh wounds were sutured and a suction drainage was placed under the fascia. A couple of days of bed rest with the legs adducted were recommended in order to prevent stretching of the gracilis tendon.

The patient had an uneventful postoperative course and was discharged 1 week after surgery with the diverted ileostomy in place. In the postoperative period, she underwent periodical medication of the neovagina with irrigation using disinfecting solution and gentle dilation of the neovagina to prevent shrinkage and spontaneous closure. At 3 months, the healing of the neovagina-rectal fistula was investigated by clinical examination, flexible rectosigmoidoscopy and proctography, all confirming the complete closure of the fistula.

Three months later, the diverting ileostomy was closed uneventfully and the patient was discharged 1 week later.

After 9 months of follow-up, there were no complications and the patient was able to resume a normal life,

although she is not yet using the neovagina for sexual intercourse.

## Discussion

Surgery for gender reassignment by constructing a neovagina using the scrotum and penis skin flap can be complicated by several events including urethral injury and rectal injury. A fistula between the rectum and the neovagina in a male-to-female transsexual is, however, a very rare condition. Since the desire to have a functioning neovagina is a fundamental point motivating these patients to undergo the complex and irreversible operation, any complication preventing them from engaging in sexual intercourse can have disastrous consequences on their psyche and inevitably cause medico-legal controversies. For these reasons, the prevention of such a complication is of extreme importance for the patients and the surgeon.

Surgery to repair “normal” rectovaginal fistulas is far from standardized. Since treatment varies depending on the site and nature of the fistula, and therefore, rectovaginal fistula is considered a challenging condition even in the hands of expert surgeons. Reported failure rates range from 20 to 60 % [3]. Nevertheless, surgery to repair a rectal-neovaginal fistulas is far more difficult and unpredictable than repair of rectovaginal fistulas because of the presence of a skin flap (derived from the scrotum and penis), the deepness of the rectal lesion (usually mid-rectum), and the uncertainty about which route is best for approaching the lesion.

The literature on this topic is very scarce and almost all the cases reported involved construction of a terminal colostomy. Krege [4] reports 3 cases of rectal defects after gender reassignment surgery: the first patient was unsuccessfully treated with a free skin flap, and after the recurrence, she needed a colostomy. The other two cases were treated with a temporary colostomy but the final outcome was not reported. Similarly, French authors [5] reported one rectal lesion and one post-traumatic recto-vaginal fistula among the complications of 63 male-to-female gender transformation operations, but the treatment adopted and its outcome are not mentioned.

The use of gracilis muscle interposition to treat difficult rectovaginal/vesicovaginal fistulas was first described by Garlock in 1928 [6]. Other muscles (gluteus, sartorius, rectus abdominal) have been proposed to treat such a challenging condition, but with a low success rate, while the use of the gracilis muscle is advocated by most authors to treat recurrent or difficult rectovaginal fistulas [7]. We believed this surgical option was the most feasible way of treating our patient after the two preceding operations had failed. The gracilis muscle is long enough to cover the



**Fig. 1** The right gracilis muscle is tunneled between the neovagina and the rectum through an anterior perineal approach

repaired rectal lesion and to keep it separated from the neovagina by vital tissue, whereas direct attempts to repair these fistulas are almost always unsuccessful even with a diverting stoma. Failure to fix this complication could have had disastrous psychological implications in this patient, since, not only would she have had a permanent ileostomy, but, most importantly, because it would have prevented sexual intercourse, which was believed essential for her new life and therefore was the strongest motivation to undergo gender reassignment surgery.

## Conclusions

Perineal graciloplasty is a safe and effective way of treating recurrent recto-neovaginal fistula in a male-to-female transsexual.

**Conflict of interest** The authors declare that they have no conflict of interest.

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